WHAT IS CLAIMED IS:

1. In an image encoding method which comprises producing a DC image composed of each block mean value by dividing an image data per B pixel into a block, making a part of said DC image a DC nest, and where the differential vector which is obtained by separating the DC value from the pixel block to be encoded is over an allowable value, calculating one or more orthogonal basis, to which the differential vector is approximated, by the adaptive orthogonal transform using the DC nest, the improvement which comprises setting the lowest n ($n = \log_2 B$) bits of the DC pixels in each sample to 0, where the base extraction blocks are down-sampled from the DC nest and the block mean value thereof is calculated using the samples.

2. The method according to Claim 1, wherein the lowest n bits of each DC pixels are set to 0, where the DC nest is produced from the DC image.

3. The method according to Claims 1 and 2, wherein a base extraction vector is produced to which the differential vector approximates by separating the block mean value from the base extraction block in which n bits of the DC pixels are set to 0.

4. The method according to Claim 3, optional elements of base extraction vectors$\langle u_i \rangle$are replaced by linear bond of the remainder elements and the inner product of the base extraction vectors and the other optional vectors$\langle w \rangle$are calculated by the formula.

$$\langle w \cdot u_i \rangle = (w_1 - w_{16})\, u_1 + (w_2 - w_{16})\, u_2 + \cdots + (w_{15} - w_{16})\, u_{15}$$

5. The method according to Claims 3 and 4, wherein a first basis is searched so that h_i may be maximum in the following formula,

$$h_i = \langle d \cdot u_i \rangle^2 / \| u_i \|^2$$

wherein $\langle d \rangle$ is the differential vectors and $\langle u_i \rangle$ is the base extraction vectors.

6. The method according to Claims 3 and 4, wherein a second basis is searched so that h_i may be maximum in the following formula,

$$h_i = \{ \langle d \cdot u_i \rangle - (\langle d \cdot u_1 \rangle \langle u_1 \cdot u_i \rangle / \| u_1 \|^2)^2 / \{ \| u_i \|^2 - (\langle u_1 \cdot u_i \rangle) / \| u_1 \|^2 \}$$

wherein $\langle d \rangle$ is the differential vectors, $\langle u_1 \rangle$ is the base extraction vectors corresponding to the first basis, and $\langle u_i \rangle$ is the base extraction vectors for searching the second basis.

7. The method according to Claims 3 and 4, wherein a third basis is searched so that h_i may be maximum in the following formula,

$$h_i = (\langle d \cdot u_i \rangle - \langle d \cdot v_1 \rangle \langle v_1 \cdot u_i \rangle - \langle d \cdot v_2 \rangle \langle v_2 \cdot u_i \rangle)^2 / \{ \| u_i \|^2 - \langle v_1 \cdot u_i \rangle^2 - \langle v_2 \cdot u_i \rangle \}^2$$

wherein $\langle d \rangle$ is the differential vectors, $\langle v_1 \rangle$ is the first orthonormal base vectors, $\langle v_2 \rangle$ is the second orthonormal base vectors, and $\langle u_i \rangle$ is the base extraction vectors for searching the third basis.

8. The method according to Claims 6 and 7, wherein the base extraction vectors $\langle u_i \rangle$ which match with search conditions are subjected to orthonormal transform with one or more preceding orthonormal basis.

9. In an image encoding method which comprises producing a DC image composed of each block mean value by dividing an image data per B pixel into a block, making a part of said DC image a DC nest, and where the differential vector which is obtained by separating the DC value from the pixel block to be encoded is over an allowable value, calculating one or more orthogonal basis, to which the differential vector is approximated, by the adaptive orthogonal transform using the DC nest, the improvement which comprises rearranging the norms of each scalar expansion coefficient $\beta_1 \sim \beta_m$ in ascending or descending order, calculating a difference (including 0) between the norms adjacent to each other, and applying Huffman coding to the obtained difference, wherein the basis is represented by $\beta_k \langle u_k \rangle$ ($k = 1 \sim m$).

10. In an image encoding method which comprises producing a DC image composed of each block mean value by dividing an image data per B pixel into a block, making a part of said DC image a DC nest, and where the differential vector which is obtained by separating the DC value from the pixel block to be encoded is over an allowable value, calculating one or more orthogonal basis, to which the differential vector is approximated, by the adaptive orthogonal transform using the DC nest, the improvement which comprises encoding an image data of coding objective blocks instead of the coding of the basis,

where the basis is more than certain number.

11. In an image decoding method which comprises reproducing a DC image corresponding to each block mean value per B pixel from encoding data with respect to the HVQ system, making a part of said DC image a DC nest, and reproducing image data of target block by synthesizing, to DC value of target block, one or more basis vectors which is selected from DC nests based on the encoding data, the improvement which comprises setting the lowest n ($n = \log_2 B$) bits of the DC pixels in each sample to 0, where the selected block is down-sampled from the DC nest and the block mean value of it is calculated using the samples.

12. In an image decoding method which comprises reproducing a DC image corresponding to each block mean value per B pixel from encoding data with respect to the HVQ system, making a part of said DC image a DC nest, and reproducing image data of target block by synthesizing, to DC value of target block, one or more basis vectors which is selected from DC nests based on the encoding data, the improvement which comprise, where the decoded basis is information with respect to $\beta_k\langle u_k\rangle$ ($k = 1 \sim m$), setting the lowest n ($n = \log_2 B$) bits of the DC pixels per each selected block (U_k) read out from the DC nest to 0, calculating a product-sum of basis $\beta_k\langle u_k\rangle$ ($k = 1 \sim m$), and then dividing the calculated result by the block pixel number B.

13. The method according to Claims 11 and 12, wherein the lowest n bits of each DC pixel is made 0, where DC nests are produced from the DC image.

14. In an image encoding apparatus which comprises producing a DC image composed of each block mean value by dividing an image data per B pixel into a block, making a part of said DC image a DC nest, and where a differential vector which is obtained by separating the DC value from the pixel block to be encoded is over an allowable value, calculating one or more orthogonal basis, to which the differential vector is approximated, by the adaptive orthogonal transform using the DC nest, the improvement comprising a memory to store the DC nest in which the lowest n ($n = \log_2 B$) bits of the DC nest pixels are set to 0.

15. In an image decoding apparatus which comprises reproducing a DC image corresponding to each block mean value per B pixel from encoding data with respect to the HVQ system, making a part of said DC image a DC nest, and reproducing image data of target block by synthesizing, to the DC value of target block, one or more basis vectors which is selected from DC nests based on the encoding data, the improvement comprising a memory to store the DC nest in which the lowest n ($n = \log_2 B$) bits of the DC nest pixels are set to 0.

16. A computer readable recording medium storing a program to make a computer to implement the processing according to Claims 1 to 13.